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cagctacatg ccattaatct ggaaggaacg ggcaggaaag ccaccatgca aacaacccag agetectgee eeggeageee eecagatact gaggatgget gggageeeat eetatgeagg ggagagatca acttcggagg gtctgggaag aagcgaggca agtttgtgaa ggtgccaagc agtgtggccc cctctgtgct ttttgaactc ctgctcaccg agtggcacct gccagccccc aacctggtgg tgtccctggt gggtgaggaa cgacctttgg ctatgaagtc gtggcttcgg gatgtcctgc gcaaggggct ggtgaaagca gctcagagca caggtgcctg gatcctgacc agtgccctcc acgtgggcct ggcccgccat gttggacaag ctgtacgtga tcactctctg gctagcacat ccaccaagat ccgtgtagtg gccatcggaa tggcctctct ggatcgaatc cttcaccqtc aacttctaga tggtgtccac caaaaggagg atactcccat ccactaccca gcagatgagg gcaacattca gggacccctc tgcccctgg acagcaatct ctcccacttc atccttgtgg agtcaggcgc ccttgggagt gggaacgacg ggctgacaga gctgcagctg agcctggaga agcacatctc tcagcagagg acaggttatg ggggcaccag ctgcatccag atacctgtcc tttgcctgtt ggtcaatggt gaccccaaca ccctagagag gatttccagg gcagtggagc aggctgccc atggctgatc ctggcaggtt ctggtggcat tgctgatgta ctcgctgccc tggtgagcca gcctcatctc ctggtgcccc aggtggctga gaagcagttc agagagaaat tccccagcga gtgtttctct tgggaagcca ttgtacactg gacagagctg ttacagaaca ttgctgcaca ccccacctg ctcacagtat atgacttcga gcaggagggt teggaggace tggacactgt catecteaag geacttgtga aageetgeaa gageeacage caagaageee aagaetaeet agatgagete aagttageag tggeetggga tegegtggae attgccaaga gtgaaatctt caatggggac gtggaatgga agtcctgtga cttggaagag gtgatgacag atgccctcgt gagcaacaag cctgactttg tccgcctctt tgtggacagc ggtgctgaca tggccgagtt cttgacctat gggcggctgc agcagcttta ccattctgtg tececeaaga geeteetett tgaactgetg eagegtaage atgaggaggg taggetgaca ctagecages taggtages a georgetegg gagetages ttaggtetages tagettetea ctccacgagg tetecegegt actcaaagae tteetgeatg aegeetgeeg tggettetae caggacggc gcaggatgga ggagagaggg ccacctaagc ggcccgcagg ccagaagtgg ctgccagacc tcagtaggaa gagtgaagac ccttggaggg acctgttcct ctgggctgtg ctgcagaatc gttatgagat ggccacatac ttctgggcca tgggccggga gggtgtggct gctgctctgg ctgcctgcaa gatcataaag gaaatgtccc acctggagaa agaggcagag gtggcccgca ccatgcgtga ggccaagtat gagcagctgg ccctggatct tttctcagag tgctacggca acagtgagga ccgtgccttt gccctgctgg tgcgaaggaa ccacagctgg agcaggacca cgtgcctgca cctggccact gaagctgatg ccaaggcctt ctttgcccat gacggtgtgc aagcatteet gaccaagate tggtggggag acatggccae aggcaeacee atcctacggc ttctgggtgc cttcacctgc ccagccctca tctacacaaa cctcatctcc ttcagtgagg atgccccgca gaggatggac ctagaagatc tgcaggagcc agacagcttg gatatggaaa agagcttcct atgcagccgg ggtggccaat tggagaagct aacagaggca ccaagggete caggegatet aggeceacaa getgeettee tgeteacaeg gtggaggaag ttctggggcg ctcctgtgac tgtgttcctg gggaatgtgg tcatgtactt cgcattcctc ttcctgttca cctatgtcct gctggtggac ttcaggccac caccccaggg gccgtctgga tccgaggtta ccctctattt ctgggtgttc acactggtgc tggaggaaat ccgacagggc ttcttcacag atgaggacac gcacctggtg aagaaattca ctctgtatgt ggaagacaac tggaacaagt gtgacatggt ggccatcttc ctgttcattg tgggagtcac ctgtagaatg gtgccctcgg tgtttgaggc tggcaggacc gttctggcca ttgacttcat ggtgttcaca cttcggctca tccacatctt tgctattcac aagcagttgg gtcctaagat catcattgta gagcgaatga tgaaggatgt cttcttttc ctcttctcc tgagcgtatg gcttgtggcc tatggtgtga ccactcaggc cctgctgcat ccccatgatg gccgtttgga gtggattttc cgccgtgtgc tatacaggcc ttacctgcag atctttgggc aaatccctct ggatgaaatt gatgaggete gtgtgaactg ttetetteae eetetgetge tggaaagete ggetteetge cctaatctct atgccaactg gctggtcatt ctcctgctgg ttaccttcct gcttgtcact

FIG. 1A (SEQ ID NO: 1)

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aatgtgctgc tcatgaacct tctgatcgcc atgttcagct acacattcca ggtggtgcaa ggcaatgcag acatgttctg gaagtttcaa cgctaccacc tcatcgttga ataccatgga agaccagete tggccccgcc etteateetg etcagecace tgageetggt getcaagcag gtcttcagga aggaagccca gcataagcga caacatctgg agagagactt gcctgacccc ttggaccaga agatcattac ctgggaaacg gttcaaaagg agaacttcct gagtaccatg gagaaacgga ggagggacag cgagggggag gtgctgagga aaacggcaca cagagtggac ttgattgcca aatacatcgg ggggctgaga gagcaagaaa agaggatcaa gtgtctggaa tcacaggcca actactgtat gctcctcttg tcctctatga cggatacact ggctccagga ggcacctact caagctctca gaactgtggt tgcaggagtc agccagcctc tgctagagac agggagtacc tagagtctgg cttgccaccc tctgacacct gaaatggaga aaccacttgc tctagagccc cagacctggc cacatcgagt ttttggggca catcaacctt cccccactcc cagcagecee aagaaatggt etteaaggee ttgetacaga teaettettg gacateeett cctaagagaa tgaaactcat gtctttggca tctattcggg agcctcagaa gtatcctctc cagcagggca agattttca tgtcccacta aagctttcac tggcttggac tggacagctg gatctggcca agtcctacat aggacaccat ctgcctggat ggggctattt aggtctaacc cctgtcttac cctgagttcc taagaagcca acctcttaaa cactaggttt ctttctgacc cctgacccac tcattagctg accagctcct agagggcagg actcagatct attgtaatta cctcccatct ttcaccccc acagcattat ctgtctgatc attctggcag aaaccccaag atattgctca agggtaccca atgctacttt actttctata aagcctgtag accacctcaa ааааааааа ааааааа

FIG.1B



MQTTQSSCPGSPPDTEDGWEPILCRGEINFGGSGKKRGKFVKVPSSVAPSVLFELLLTEWHLPAPNLVVSLVGEERPLAMKSWLRDVLR KGLVKAAQSTGAWILTSALHVGLARHVGQAVRDHSLASTSTKIRVVAIGMASLDRILHRQLLDGVHQKEDTPIHYPADEGNIQGPLCPL DSNLSHFILVESGALGSGNDGLTELQLSLEKHISQQRTGYGGTSCIQIPVLCLLVNGDPNTLERISRAVEQAAPWLILAGSGGIADVLA LAVAWDRVDIAKSEIFNGDVEWKSCDLEEVMTDALVSNKPDFVRLFVDSGADMAEFLTYGRLQQLYHSVSPKSLLFELLQRKHEEGRLT TFQVVQGNADMFWKFQRYHLIVEYHGRPALAPPFILLSHLSLVLKQVFRKEAQHKRQHLERDLPDPLDQKIITWETVQKENFLSTMEKR ALVSQPHLLVPQVAEKQFREKFPSECFSWEAIVHWTELLQNIAAHPHLLTVYDFEQEGSEDLDTVILKALVKACKSHSQEAQDYLDELK LAGLGAQQARELPIGLPAFSLHEVSRVLKDFLHDACRGFYQDGRRMEERGPPKRPAGQKWLPDLSRKSEDPWRDLFLWAVLQNRYEMAT YFWAMGREGVAAALAACKIIKEMSHLEKEAEVARTMREAKYEQLALDLFSECYGNSEDRAFALLVRRNHSWSRTTCLHLATEADAKAFF RRDSEGEVLRKTAHRVDLIAKYIGGLREQEKRIKCLESQANYCMLLLSSMTDTLAPGGTYSSSQNCGCRSQPASARDREYLESGLPPSD GPQAAFLLTRWRKFWGAPVTVFLGNVVMYFAFLFLFTYVLLVDFRPPPQGPSGSEVTLYFWVFTLVLEEIRQGFFTDEDTHLVKKFTLY QALLHPHDGRLEWIFRRVLYRPYLQIFGQIPLDEIDEARVNCSLHPLLLESSASCPNLYANWLVILLLVTFLLVTNVLLMNLLIAMFSY /EDNWNKCDMVAIFLFIVGVTCRMVPSVFEAGRTVLAIDFMVFTLRLIHIFAIHKQLGPKIIIVERMMKDVFFFLFFLSVWLVAYGVTT AHDGVQAFLTKIWWGDMATGTPILRLLGAFTCPALIYTNLISFSEDAPQRMDLEDLQEPDSLDMEKSFLCSRGGQLEKLTEAPRAPGDI

FIG.2

(SEQ ID NO: 2)

atgcaggatg.tccaaggccc ccgtcccgga agccccgggg atgctgaaga ccggcgggag ctgggcttgc acaggggcga ggtcaacttt ggagggtctg ggaagaagcg aggcaagttt gtacgggtgc cgagcggagt ggccccgtct gtgctctttg acctgctgct tgctgagtgg cacctgccgg cccccaacct ggtggtgtcc ctggtgggtg aggagcagcc tttcgccatg aagteetgge tgegggatgt getgegeaag gggetggtga aggeggetea gageaeagga gcctggatcc tgaccagtgc cctccgcgtg ggcctggcca ggcatgtcgg gcaggccgtg cgcgaccact cgctggccag cacgtccacc aaggtccgtg tggttgctgt cggcatggcc tegetgggee gegteetgea eegeegeatt etggeggegg eecaggagga tttteetgte cactaccctg aggatgacgg cggcagccag ggccccctct gttcactgga cagcaacctc teceaettea teetggtgga geeaggeece eeggggaagg gegatggget gaeggagetg cggctgaggc tggagaagca catctcggag cagagggcgg gctacggggg cactggcagc ategagatee etgteetetg ettgetggte aatggtgate ceaacacett ggagaggate tecagggeeg tggageagge tgeeeegtgg etgateetgg taggeteggg gggeategee gatgtgcttg ctgccctagt gaaccagccc cacctcctgg tgcccaaggt ggccgagaag cagtttaagg agaagttccc cagcaagcat ttctcttggg aggacatcgt gcgctggacc aagetgetge agaacateae etcaeaeeag caeetgetea eegtgtatga ettegageag gagggctccg aggagctgga cacggtcatc ctgaaggcgc tggtgaaagc ctgcaagagc cacagecagg agecteagga etatetggat gageteaage tggeegtgge etgggaeege gtggacatcg ccaagagtga gatcttcaat ggggacgtgg agtggaagtc ctgtgacctg gaggaggtga tggtggacga cctggtcagc aacaagcccg agtttgtgcg cctctttgtg gacaacggcg cagacgtggc cgacttcctg acgtatgggc ggctgcagga gctctaccgc teegtgteae geaagageet getettegae etgetgeage ggaageagga ggaggeeegg ctgacgctgg ccggcctggg cacccagcag gcccgggagc cacccgcggg gccaccggcc ttctccctgc acgaggtctc ccgcgtactc aaggacttcc tgcaggacgc ctgccgaggc ttctaccagg acggccggcc aggggaccga aggagggcgg agaagggccc ggccaagcgg cccacgggcc agaagtggct gctggacctg aaccagaaga gcgagaaccc ctggcgggac ctgttcctgt gggccgtgct gcagaaccgc cacgagatgg ccacctactt ctgggccatg ggccaggaag gtgtggcagc cgcactggcc gcctgcaaaa tcctcaaaga gatgtcgcac ctggagacgg aggccgaggc ggcccgagcc acgcgcgagg cgaaatacga gcggctggcc cttgacctct tctccgagtg ctacagcaac agtgaggccc gcgccttcgc cctgctggtg cgccggaacc gctgctggag caagaccacc tgcctgcacc tggccaccga ggctgacgcc aaggeettet ttgeeeacga eggegtteag geetteetga eeaggatetg gtggggggae atggccgcag gcacgcccat cctgcggctg ctaggagcct tcctctgccc cgccctcgtc tataccaacc tcatcacctt cagtgaggaa gctcccctga ggacaggcct ggaggacctg caggacetgg acageetgga caeggagaag ageeegetgt atggeetgea gageegggtg gaggagetgg tggaggegee gagggeteag ggtgaeegag geeeaegtge tgtetteetg ctcacacgct ggcggaaatt ctggggcgct cccgtgactg tgttcctggg gaacgtggtc atgtacttcg ccttcctctt cctgttcacc tacgtcctgc tggtggactt caggccgccc ccccagggcc cctcagggcc cgaggtcacc ctctacttct gggtctttac gctggtgctg gaggaaatcc ggcagggctt cttcacagac gaggacacac acctggtgaa gaagttcaca ctgtatgtgg gggacaactg gaacaagtgt gacatggtgg ccatcttcct gttcatcgth gttgtcacct gcaggatgct gccgtcggcg tttgaggctg gccgcacggt cctcgccatg gacttcatgg tgttcacgct gcggctgatc catatctttg ccatacacaa gcagctgggc cccaagatca tcgtggtaga gcgcatgatg aaggacgtct tcttcttcct cttcttctg agegtgtggc tegtggccta eggtgtcacc acceaggege tgctgcaccc ccatgaegge cgcctggagt ggatcttccg ccgggtgctc taccggccct acctgcagat cttcggccag atcccactgg acgagattga tgaagcccgt gtgaactgct ccacccaccc actgctgctg gaggactcac catcctgccc cagcctctat gccaactggc tggtcatcct cctgctggtc accttectgt tggteaceaa tgtgetgete atgaacetge teategeeat gtteagetae acgttccagg tggtgcaggg caacgcagac atgttctgga agttccagcg ctacaacctg

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attgtggagt accacgagcg ccccgccctg gccccgccct tcatcctgct cagccacctg agcctgacgc tccgccggt cttcaagaag gaggctgagc acaagcggga gcacctggag agagacctgc cagacccct ggaccagaag gtcgtcacct gggagacagt ccagaaggag aacttcctga gcaagatgga gaagcggagg agggacagcg agggggaggt gctgcggaaa accgcccaca gagtggactt cattgccaag tacctcgggg ggctgagaga gcaagaaaag cgcatcaagt gtctggagtc acagatcaac tactgctcgg tgctcgtgtc ctccgtggct gacgtggtgg cccagggtgg cggccccgg agctctcagc actgtggcga gggaagccag ctggtggctg ctgaccacag aggtggttta gatggctggg aacaacccgg ggctggccag cctccctcgg acacatga

FIG.3B

MODVOGPRPG SPGDAEDRRE LGLHRGEVNF GGSGKKRGKF VRVPSGVAPS VLFDLLLAEW HLPAPNLVVS LVGEEQPFAM KSWLRDVLRK GLVKAAQSTG AWILTSALRV GLARHVGQAV RDHSLASTST KVRVVAVGMA SLGRVLHRRI LEEAQEDFPV HYPEDDGGSQ GPLCSLDSNL SHFILVEPGP PGKGDGLTEL RLRLEKHISE QRAGYGGTGS IEIPVLCLLV NGDPNTLERI SRAVEQAAPW LILVGSGGIA DVLAALVNOP HLLVPKVAEK QFKEKFPSKH FSWEDIVRWT KLLQNITSHQ HLLTVYDFEQ EGSEELDTVI LKALVKACKS HSQEPQDYLD ELKLAVAWDR VDIAKSEIFN GDVEWKSCDL EEVMVDALVS NKPEFVRLFV DNGADVADFL TYGRLQELYR SVSRKSLLFD LLQRKQEEAR LTLAGLGTQQ AREPPAGPPA FSLHEVSRVL KDFLQDACRG FYQDGRPGDR RRAEKGPAKR PTGQKWLLDL NQKSENPWRD LFLWAVLQNR HEMATYFWAM GQEGVAAALA ACKILKEMSH LETEAEAARA TREAKYERLA LDLFSECYSN SEARAFALLV RRNRCWSKTT CLHLATEADA KAFFAHDGVQ AFLTRIWWGD MAAGTPILRL LGAFLCPALV YTNLITFSEE APLRTGLEDL QDLDSLDTEK SPLYGLQSRV FELVEAPRAO GDRGPRAVFL LTRWRKFWGA PVTVFLGNVV MYFAFLFLFT YVLLVDFRPP POGPSGPEVT LYFWVFTLVL EEIRQGFFTD EDTHLVKKFT LYVGDNWNKC DMVAIFLFIV GVTCRMLPSA FEAGRTVLAM DFMVFTLRLI HIFAIHKOLG PKIIVVERMM KDVFFFLFFL SVWLVAYGVT TQALLHPHDG RLEWIFRRYL YRPYLQIFGQ IPLDEIDEAR VNCSTHPLLL EDSPSCPSLY ANWLVILLLV TFLLVTNVLL MNLLIAMFSY TFOVVOGNAD MFWKFQRYNL IVEYHERPAL APPFILLSHL SLTLRRVFKK EAEHKREHLE RDLPDPLDQK VYTWETVOKE NFLSKMEKRR RDSEGEVLRK TAHRVDFIAK YLGGLREQEK RIKCLESQIN YCSVLVSSVA DVLAQGGGPR SSQHCGEGSQ LVAADHRGGL DGWEQPGAGQ PPSDT*

FIG.4

(SEQ ID NO: 4)

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3	• 6/18			
mTrp8 hTRP8	MQTTQSSCPGSPPDTEDGWEPILCRGEINFGGSGKKRGKFVK MQDVQGPRPGSPGDAEDRRELGLHRGEVNFGGSGKKRGKFVR ** .*. **** *:** * * ***:***********	VPSGVAPSVL	FDLLLAEW	60 60
mTrp8 hTRP8	HLPAPNLVVSLVGEERPLAMKSWLRDVLRKGLVKAAQSTGAW HLPAPNLVVSLVGEEQPFAMKSWLRDVLRKGLVKAAQSTGAW ************************************	ILTSALRVGL	ARHVGQAV	120 120
mTrp8 hTRP8	RDHSLASTSTKIRVVAIGMASLDRILHRQLLDGVHQKEDTPI RDHSLASTSTKVRVVAVGMASLGRVLHRRILEEAQ EDFPV ************************************	HYPEDDGGSC	GPLCSLDS	180 178
mTrp8 hTRP8	NLSHFILVESGALGSGNDGLTELQLSLEKHISQQRTGYGGTS NLSHFILVEPGPPGKG-DGLTELRLEKHISEQRAGYGGTG *********.*. *.* ******:* ******:**:*****.	SIEIPVLCLL	VNGDPNTL	
mTrp8 hTRP8	ERISRAVEQAAPWLILAGSGGIADVLAALVSQPHLLVPQVAE ERISRAVEQAAPWLILVGSGGIADVLAALVNQPHLLVPKVAE ************************************	KQFKEKFPSk	KHFSWEDIV	
mTrp8 hTRP8	HWTELLQNIAAHPHLLTVYDFEQEGSEDLDTVILKALVKACK RWTKLLQNITSHQHLLTVYDFEQEGSEELDTVILKALVKACK :**:****:* ***************************	CSHSQEPQDYL	_DELKLAVA	360 357
mTrp8 hTRP8	WDRVDIAKSEIFNGDVEWKSCDLEEVMTDALVSNKPDFVRLF WDRVDIAKSEIFNGDVEWKSCDLEEVMVDALVSNKPEFVRLF ************************************	FVDNGADVADI	FLTYGRLQE	
mTrp8 hTRP8	LYHSVSPKSLLFELLQRKHEEGRLTLAGLGAQQARELPIGLF LYRSVSRKSLLFDLLQRKQEEARLTLAGLGTQQAREPPAGPF **:*** *****:*************************	PAFSI HEVSRY	VLKDFLODA	477
mTrp8 hTRP8	CRGFYQDGRRMEERGPPKRPAGQKWLPDLSRKSEDPWFCRGFYQDGRPGDRRRAEKGPAKRPTGQKWLLDLNQKSENPWF************************************	RDLFLWAVLQ	NRHEMATYF	537
mTrp8 hTRP8	WAMGREGVAAALAACKIIKEMSHLEKEAEVARTMREAKYEQI WAMGQEGVAAALAACKILKEMSHLETEAEAARATREAKYERI ****:********************************	_ALDLFSECY	SNSEARAFA	597

FIG.5

(SEQ ID NO: 6)